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Review Article

Palatal Mucoepidermoid Carcinoma: A Rare Intraoral Malignancy

A. Ismail[1*], F. Nachite[1], Y. Labani[2], A. Raji[2], A. Belbachir[1], H. Rais[1]

[1]Department of Pathology, Mohammed VI University Hospital, Marrakech, Morocco

[2]Department of Otolaryngology, Mohammed VI University Hospital, Marrakech, Morocco

[*]**Corresponding author:** Ayman Ismail, Department of Pathology, Mohammed VI University Hospital, Marrakech, Morocco. Email: aymannn17@gmail.com

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Summary

Background: Malignant tumors involving salivary glands are rare and account for less than 3% of head and neck cancers. Mucoepidermoid carcinomas - MEC - can arise from both major and minor salivary glands. Among the minor salivary glands, MECs develop most frequently in the palate. We report the observation of a 23 years female patient with an history of slow growing, painless swelling in the palate since, 8 months. Intraoral examination showed 1.5X2.5 slightly purplish well circumscribed swelling located at the junction of hard and soft palate. An excisional biopsy was performed. The histopathological examination of the specimen found an invasive tumor composed of atypical squamous cells, mucus cells and intermediate cells. Nearly acellular pools of mucin were disseminated in the stroma areas the immunohistochemical examination showed strong staining of the tumour cells for CK19. Tumor cells were also immunopositive for Vimentin while negative for CD117. Thus, the diagnosis of low grade mucoepidermoid carcinoma was given. The surgical treatment for low-grade MECs requires Wide local excision with adequate free margins. Clinically, MEC can mimics reactive or benign salivary gland lesion. Thus, the MEC must be considered in differential diagnosis of intraoral swellings particularly for those located in the palate

Introduction

Malignant tumors involving salivary glands are rare and account for less than 3% of head and neck cancers [1]. Mucoepidermoid carcinomas - MEC - are the most prevalent salivary gland malignancies representing approximately 30% of all malignant tumors of the salivary gland. They can arise from both major and minor salivary glands. Parotid gland is the most common site for mucoepidermoid carcinoma accounting for two-third of cases [2]. Among the minor salivary glands, MECs develop most frequently in the palate (28%) [3]. MEC of the palate are most frequently located at the junction of hard and soft palate [4]. The clinical presentation varies depending on tumor site, size and grade [5]. Symptoms are usually not very suggestive especially in the early stages [6].

Case Report

We report the observation of a 23 years female patient with an history of slow growing, painless swelling in the palate since, 8 months. No other symptoms were noted. Her past medical history was otherwise unremarkable. Intraoral examination showed 1.5X2.5 slightly purplish well circumscribed swelling located at the junction of hard and soft palate. On palpation, the swelling consistency was firm to hard and non-tender with slightly indureted borders. It is centered by a cystic component. The surrounding palatal mucosa was normal. There were no palpable cervical lymph nodes. An excisional biopsy was performed. The histopathological examination of the specimen found an invasive tumor composed of varying proportions of atypical squamous cells, mucus cells and intermediate cells forming nests and trabeculae. The nuclear pleomorphism was very important. The Mitotic rate was low, and the tumor stroma was fibrous. Nearly acellular pools of mucin were disseminated in the stroma areas (highlighted with Alcian blue-periodic acid Schiff). Margin of the exised specimen were free. The immunohistochemical examination showed strong staining of the tumour cells for CK19. Tumor cells were also immunopositive for Vimentin while negative for CD117. Thus, the diagnosis of low grade mucoepidermoid carcinoma was given.

Discussion

The term mucoepidermoid Carcinoma was introduced in 1945 by Stewart and colleagues to define a distinct salivary gland tumor characterized by three types of cells in various proportions, including epidermoid cells, non-descript intermediate cells

and mucus cells. Intermediate cells are thought to be capable of differentiating into mucous or epidermoid cells [7,8]. The diagnosis of MEC requires the existence of these three types of cells with mucin filled cystic spaces [9]. Mucicarmine staining and Periodic Acid Schiff (PAS) stain with diastase demonstrate intracytoplasmic staining in mucinous cells [5]. MEC is the most common malignant neoplasm observed in the major and minor salivary glands. The palate is the most commonly affected region for minor gland tumors. Other minor salivary gland origins include maxillary sinus, tongue, lip, gingiva, floor of the mouth [10]. MEC occurs over a wide age distribution with a peak incidence in the second decade of life [5]. Young adults are mostly affected, with more than 50% of patients under the age of 30. Males and females are affected equally [11]. Clinically, the majority of palatal MEC appears as slow growing, persistent swelling which is usually painless and soft in consistency [3]. However, pain and indurated mass are indicators of advanced disease or high grade MEC. Symptoms can also include paresthesia, dysphagia, and bleeding [9].

In the histotologic grading of mucoepidermoid carcinoma, the degree of gland or cyst formation, cellular anaplasia, mitotic activity and extent of invasiveness allows to classify MECs into three types of malignancy: low, intermediate and high grade [5,12]. Low grade MEC shows an admixture of mucus cells, intermediate cells, and epidermoid cells. The tumor has a prominent cystic component, lack of neural invasion, necrosis or cellular anaplasia, and only rare mitotic (Figures 1-6) [13]. An intermediate grade tumor comprises of solid as well as cystic areas with more predominance of solid areas [3]. High-grade features of a MEC tumor are necrosis, nuclear polymorphism, hyperchromasia and active mitosis (>4 per 10 high-powered fields) [11]. MEC expresses CK7, CK8, CK13, CK14, CK18, and CK19 with a varied positivity depending on the type and topography of the cells in the neoplastic growth patterns. Luminal columnar cells strongly stains for CK7, CK8, and CK19, and less expressive for CK13 and CK18. MEC shows only an occasional expression of vimentin located in both luminal and non-luminal cells. The CD117 which is well known to be strongly expressed in Adenoid Cystic Carcinoma -ACC- allow to differentiate MEC from ACC [14,15].

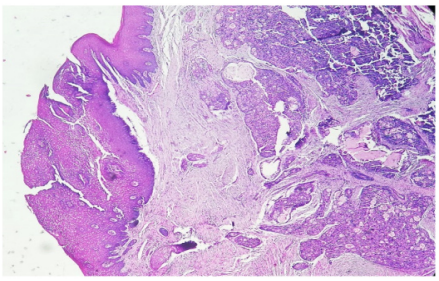

Figure 1: Invasive tumor present in nests, islands and clusters.

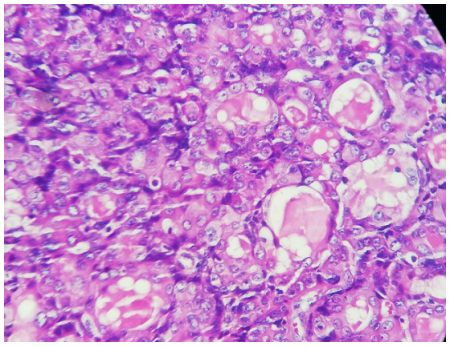

Figure 2: Tumor cells comprising large polygonal cells with abundant eosinophillic cytoplasm intermixed with intermediate type and epithelial cells.

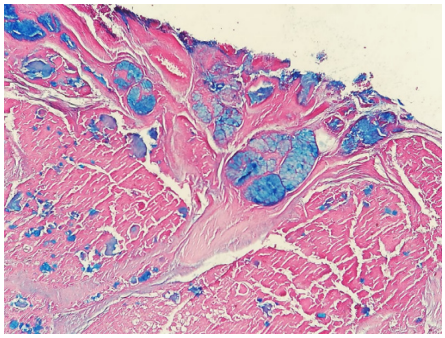

Figure 3: Cell showing mucin vacuoles (highlighted with alcian blue).

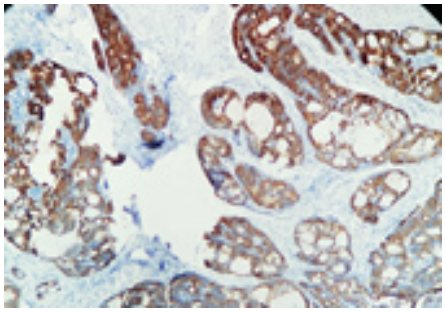

Figure 4: Strong Immunopositivity of the tumour cells for CK19.

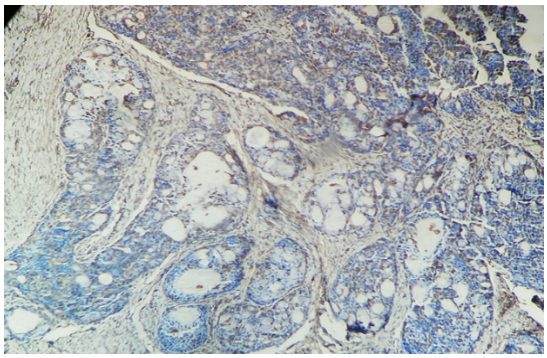

Figure 5: Immunopositivity of the tumour cells for Vimentin.

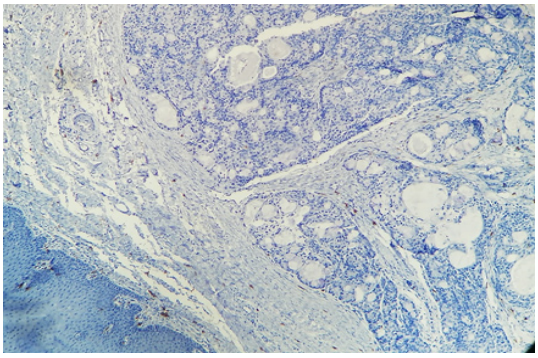

Figure 6: Negative staining of the tumor cells for CD117.

Conclusion

The surgical treatment for low-grade MECs requires Wide local excision with adequate free margins which provides excellent local control and survival. The prognosis of low grade MECs is favorable and is associated with poor risk of recurrence and regional metastasis. Clinically, MEC can mimics reactive or benign salivary gland lesion. Thus, MEC must be considered in differential diagnosis of intraoral swellings particularly for those located in the palate [17,18].

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